AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 2, 17 and 20 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A signal detection system comprising:

an electromagnetic signal detector having a limited duty cycle on-time for detecting receipt of electromagnetic signals,

at least two optical paths each arranged to receive an electromagnetic signal from a same nominal direction in space and to transmit any received signal towards said signal detector, and

a first optical time delay within one of said optical paths for delaying transmission of said received signal towards said signal detector, wherein at least one of said optical paths is arranged to transmit a signal, received during a first time period, to said signal detector during a duty cycle on-time, and said first optical time delay is selected to transmit a signal received during a second time period, earlier than said first time period and before said duty cycle on-time, to said signal detector within said duty cycle on-time, extending the operational range of said signal detector by compressing the real time during which a signal can be received by one of said at least two optical paths into the same duty cycle on-time of said signal detector.

2. (currently amended) A signal detection system, according to Claim 1, in which said at least one of said optical paths is arranged to transmit a ~~received~~ signal received during said duty cycle on-~~in real~~ time to said signal detector within ~~its on-time, and said first optical time delay is~~

~~selected to transmit any signal received before real time to said signal detector but within~~ the same duty cycle on-time.

3. (previously presented) A signal detection system, according to Claim 1, in which a further optical path is arranged to receive an electromagnetic signal from said same nominal direction in space and to transmit said received signal towards said signal detector, said further optical path including a second optical time delay which is longer than said first optical time delay.

4. (previously presented) A signal detection system, according to Claim 1, in which each of said optical paths is defined by a separate optical fibre and said optical fibres are closely packed on a focal plane to collect electromagnetic signals from approximately said same nominal direction in space.

5. (previously presented) A signal detection system, according to Claim 1, in which a single optical fibre is positioned to collect electromagnetic signals from said same nominal direction in space, and a signal splitter is arranged to split any collected signal between said optical paths.

6. (previously presented) A signal detection system, according to Claim 1, in which a lens system is arranged to focus said received signal transmitted by said optical paths onto said signal detector.

7. (previously presented) A signal detection system, according to Claim 1, in which a signal combiner is arranged to combine said received signals transmitted by said optical paths and to transmit the combined signal to said signal detector.

8. (previously presented) A signal detection system, according to Claim 1, including tagging means arranged to identify which of said optical paths has transmitted a received signal to said signal detector.

9. (previously presented) A signal detection system, according to Claim 8, in which said tagging means comprises a tagger arranged in each of said optical paths and arranged to identify a signal transmitted by that optical path.

10. (previously presented) A signal detection system, according to Claim 1, in which each of said optical paths includes a processing element to process a signal transmitted by that path.

11. (previously presented) A signal detection system, according to Claim 1, in the form of an active system, in which said optical time delay is selected to define a series of ranges over which said received signal might have travelled to said signal detection system, and said signal detector is arranged to identify the range of a source of said signal by identifying the optical path through which said signal was transmitted.

12. (previously presented) A signal detection system, according to Claim 1, in the form of a passive system in which said optical time delay is selected to enable said signal detector during a single duty cycle on-time to average the value of said received signal.

13. (previously presented) A signal detection system, according to Claim 1, in the form of an active system including an electromagnetic energy transmitter, in which said received signal comprises a reflection of part of the electromagnetic energy by an object, and said optical time delay is selected to define a series of ranges over which said reflection might have travelled to said signal detection system, and said signal detector is arranged to identify the range of said object by identifying the optical path through which said reflection was transmitted.

14. (previously presented) A signal detection system, according to Claim 13, which is mounted for scanning in small increments to receive said reflected signal from different directions, said transmitter is arranged to emit multiple bursts of electromagnetic energy to illuminate a volume in space, and said signal detector is arranged to have a series of duty cycle on-times coordinated with the bursts to detect any said reflection from said object.

15. (previously presented) A signal detection system, according to Claim 13, comprising a plurality of signal detection systems arranged as a matrix of optical fibres, each of said optical fibres pointing in a different nominal direction, to receive reflections from said object and said signal detectors are arranged to form an image of said object.

16. (previously presented) A signal detection system, according to Claim 13, comprising a plurality of signal detection systems arranged as a matrix of optical fibres, each of said optical fibres pointing in a different nominal direction, to receive reflections, an optical system arranged to focus any reflection from the object into the optical paths of said signal detectors, and said signal detectors are arranged to form an image of said object.

17. (currently amended) A method of detecting an electromagnetic signal travelling from a nominal direction in space using an electromagnetic signal detector having a limited duty cycle on-time for detecting receipt of electromagnetic signals, said method comprising the steps of:

receiving the signal in different time periods,

splitting the signal into portions and transmitting said portions along a plurality of paths,

delaying the passage of the split signal along some of said paths with respective optical delays, ~~and~~

detecting the portion of the signal that leaves each of said paths during said ~~limited~~ duty cycle on-time, and

extending the operational range of said signal detector by compressing the different time periods during which a signal can be received into the same duty cycle on-time of said signal detector.

18. (original) A method, according to Claim 17, including identifying the path through which the signal was received.

19. (previously presented) A method, according to Claim 17, including averaging the signal leaving the paths.

20. (currently amended) A signal detection system comprising:

an electromagnetic signal detector having a limited on-time for detecting receipt of electromagnetic signals,

at least two optical paths each arranged to receive an electromagnetic signal from the same nominal direction in space and to transmit any received signal towards said signal detector,

an optical time delay operative within one of said optical paths to delay transmission of said received signal towards said signal detector, and said optical time delay is selected to extend the operational range of said signal detector by compressing the real time during which said received signal can be received into the shorter on-time of said signal detector, and

an electromagnetic energy transmitter, ~~in which~~wherein said received signal comprises a reflection by an object of part of the electromagnetic energy ~~by an object~~transmitted by said transmitter, and said optical time delay is selected to define a series of ranges over which said reflection might have travelled to said signal detection system, and said signal detector is arranged to identify the range of said object by identifying the optical path through which said reflection was transmitted, wherein said signal detection system is mounted for scanning in small increments to receive said reflected signal from different directions, said transmitter is arranged to emit multiple bursts of electromagnetic energy to illuminate a volume in space, and said signal detector is arranged to have a series of on-times coordinated with the bursts to detect any said reflection from said object.